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ARKANSAS FOREST SURVEY COMPLETED

Arkansas forests have more softwood but less hardwood than they did a decade ago, according to a new survey of the State's timber resources.

The inventory in sound, well-formed trees at least 5 inches in diameter now totals 12 billion cubic feet. Softwood volume has increased 31 percent since the previous forest survey, which was completed in 1951. Softwoods include the southern yellow pines as well as cypress and red-cedar. Hardwood volume has declined 9 percent.

Volume in trees of sawtimber size is 41 billion board feet. The volume of softwood sawtimber has increased 41 percent while that of hardwood has dropped 19 percent. Improved fire protection, conservative harvesting, and removal of low-value hardwoods on areas better suited to pine helped to increase the softwood. Much of this forestry effort was on public lands and on those held by wood-using industries. Localized land clearing and heavy cutting contributed to the decline of hardwood on bottom lands.

The survey also shows that forests cover 20.8 million acres of the State's total land area of 33.6 million acres. This is 7 percent more forest land than there was in 1951. The increase is largely due to reversion of upland fields to forest.

A full report of the new survey is available upon request. --H. S. Sternitzke.

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DISK BEFORE SEEDING SLASH PINE

A 5-year-old study near Alexandria, Louisiana, shows that disking before seeding slash pine improves growth and survival enough to offset the cost of site preparation.

On an area with dense grass, seedbeds were prepared by burning about 6 months before sowing, by disking in strips, and by furrowing with a fireplow. Sowing was in the winter of 1954-55. The first growing season was wet, and on all sites survival exceeded 95 percent and height growth averaged 0.5 foot at the end of 1 year.

Five years after seeding, however, stands averaged 5.4 feet in height on the burn, 7.3 feet in plowed furrows, and 8.2 feet on disked strips. The difference of 2.8 feet between burned and disked plots is at least a full year's growth. Survival percentages from the end of the first year through the fifth were 97 on furrows, 83 on disked strips, and 64 on the burn. While both forms of mechanical site preparation improved the stands, disking is preferred for the wetter sites on which slash is customarily seeded. Experience has shown that washing and flooding often cause excessive seed losses in furrows.

Slash nursery stock planted on an adjacent unprepared site in February 1955 averaged 8.6 feet tall after 5 years in the field, and had 73 percent survival. Thus the seeded pines on the disked strips survived better and were almost as tall as planted trees, although they were one year younger from seed.

Other studies have shown that mechanical site preparation reduces mortality when sowing is done in a dry year. Faster growth and insurance against adverse weather more than justify the usual cost of \$1.50 to \$2.00 per gross acre for strip-disking.--*T.E. Russell* and *T.E. Rhame*.

SOIL SERIES CAN BE GROUPED FOR SPECIAL USES

Studies at Vicksburg have shown that topographic position and clay content are useful criteria for combining the soil series depicted on county survey maps. Such purposes as site-index classification, trafficability estimation, and watershed management often do not require delineation of individual soil series.

Twelve physical properties were studied in detail for four silt loams in Warren County, Miss. The properties included bulk density, texture (percent sand-silt-clay), Atterberg limits (liquid limit, plastic limit, and plasticity index), and moisture content at tensions of 0, 15, 30, and 60 cm. Sampling was limited to the 0- to 6-inch and 6- to 12-inch

Variation in individual properties was often as great between plots within a soil series as between plots of different series. Less variation existed between series with the same general topographic position than between series of different topographic positions. The two residual or upland series (Loring and Memphis) were reasonably similar to each other, as were the two alluvial or lowland series (Collins and Falaya). Topographic position often gave a better indication of soil physical properties than did the series name. Clay content was the most useful single differentiating characteristic, soils with relatively high clay contents resembling bottom-land soils regardless of position.--J.R. Bassett and L.E. Andrew.

PINE PITCH MOTH IN MISSISSIPPI

Dioryctria clarioralis (Walker), a common pine pitch moth in the southeastern Atlantic Coast States, is now known to occur in Mississippi. Damage was first observed in June 1958 in a 3-year-old slash pine (*Pinus elliottii* Engelm.) plantation near Gulfport, but the moths had emerged. About two months later, in September 1958, larvae were found feeding in the pine shoots. Several moths were reared and sent to the Insect Identification and Parasite Introduction Research Branch, U.S. Agricultural Research Service, where the species was identified.

Damage was restricted to terminals of stems and branches, which were mined for 6 to 24 inches from the tips, and killed.

This insect probably feeds on pines other than slash, and could become an important pest in plantations.--R.H. Beal.

TREE INJECTOR WORKS ON BOTTOM-LAND HARDWOODS

The tree injector, a handy and efficient tool for timber stand improvement in the uplands, has also proved deadly on two hard-to-kill bottom-land species, bitter pecan and overcup oak.

Hundred-percent crown kill with no sprouting was obtained 1 year after treatment of 40 pole-sized trees (average d.b.h. 6.8 inches) of each species. The trees were in west-central Mississippi. The chemical was a standard 44-pound ahg injector mixture of 2,4,5-T in diesel oil; injections were not more than 1 inch apart around the base of the trunk. As a check, a standard mixture of 8 pounds ahg of 2,4,5-T in diesel oil, applied in a continuous ax frill around the tree at convenient height, left 2 living bitter pecans out of 40 and killed all of the overcup oaks during the first year. One oak and 2 pecans had sprouts but dead crowns.

The injector, which applied a more concentrated formulation closer to the roots, gave a faster crown kill and better sprout control than the frill, but vines around the trees had to be removed before the tool could be used effectively. The greater concentration of acid used with the injector made its mixture cost 1/3 more per square foot of basal area treated.--R.M. Krinard.

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